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Marvin M. Johnson

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12/28/2009

CONLEY ROSE, P.C.

David A. Rose

P. O. BOX 3267

HOUSTON, TX 77253-3267

EXAMINER

NGUYEN, CAM N

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

12/28/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

pathou@conleyrose.com

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/727,919 | <b>Applicant(s)</b><br>JOHNSON ET AL. |  |
|                              | <b>Examiner</b><br>Cam N. Nguyen     | <b>Art Unit</b><br>1793               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09/22/09 (an amendment/response).
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 10-16, 18-20, 23-30, 32-33, 35-39, 41-44, 46-47, 49-70, 72-77, & 112-119 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

Continuation of Disposition of Claims: Claims pending in the application are 1-4,6,10-16,18-20,23-30,32,33,35-39,41-44,46,47,49-70,72-77 and 112-119.

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## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed 09/22/09 has been made of record and entered. Claims 1, 14, 23, 25, 37, 41, 51, 66, 112, & 115-116 have been amended. Claims 5, 7-9, 17, 21-22, 31, 34, 40, 45, 48, 71, & 78-111 have been canceled.

Claims 1-4, 6, 10-16, 18-20, 23-30, 32-33, 35-39, 41-44, 46-47, 49-70, 72-77, & 112-119 are currently pending in this application.

### *Specification*

2. The examiner has not checked the specification to the extent necessary to determine the presence of **all** possible minor errors (grammatical, typographical, and idiomatic). Cooperation of the applicant(s) is requested in correcting any errors of which applicant(s) may become aware of in the specification, in the claims and in any further amendment(s) that applicant(s) may file.

Applicant(s) is also requested to complete the status of the copending applications referred to in the specification by their Attorney Docket Number or Application Serial Number, **if any**.

The status of the parent application(s) and/or any other application(s) cross-referenced to this application, **if any**, should be updated in a timely manner.

**Claim Rejections - 35 USC § 102(b)**

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. **Claims 1-4, 10-16, 18-20, 23-30, 32-33, 35, 51-57, 61-69, & 72-77** are rejected under 35 U.S.C. 102(b) as being anticipated by Sarrazin et al., hereinafter referred to as "*Sarrazin '851*", (US Pat. 5,356,851).

*Sarrazin '851* discloses a selective hydrogenation catalyst containing at least one group VIII metal and at least one Group IIIA metal selected from the group consisting of gallium and indium, said metals being deposited on a catalyst support (see col.7, claim 1). The group VIII metal is palladium, platinum, or nickel (see col. 8, claim 4). The support is silica, alumina, silica-alumina, charcoal or an aluminate (see col. 8, claim 5). The Group VIII metal concentration is 0.2 to 5% by weight (see col. 8, claim 14). The Group IIIA metal concentration is 0.1 to 5% by weight (see col. 8, claim 7). The molar ratio of the metallic element of Group IIIA to the metal of Group VIII is 0.2 to 5 (see col. 8, claim 8). See also Examples in the reference, which shows catalysts contain palladium and gallium on alumina support.

The disclosed Group VIII metal and Group IIIA metal concentrations, and their metal ratios are falling within the claimed ranges, which meet the claimed limitations.

The limitation on “wherein the catalyst is capable of selectively hydrogenating acetylene with a conversion Sc of at least about 95% and a selectivity to ethylene relative to ethane Ss of at least about 25 when the catalyst is employed in a steady-state liquid phase hydrogenation

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process” in the independent claims and also in the dependent claims are noted. It is considered the catalyst disclosed by *Sarrazin '851* would inherently be capable of performing the same because both the disclosed catalyst and the claimed catalyst contain the same metal components, same metal concentrations, and having the same composition.

There is no patentable distinction seen between the claimed catalyst and that disclosed by the reference, thus anticipates the instant claims.

B. **Claims 1-4, 6, 12-13, 14-16, 18-20, 23-30, 32-33, 36, 51-57, & 61-70** are rejected under 35 U.S.C. 102(b) as being anticipated by “*Thomson '896*”, (US Pat. 5,817,896).

*Thomson '896* discloses a catalyst comprising a catalytic metal being palladium, rhodium, ruthenium, silver, gold or gallium, and a material having greater affinity for halogen than does the catalytic metal, wherein said material contains zinc, aluminum, etc. (see col. 6, claim 15). The catalyst is supported on an inert carrier, and alumina is being disclosed (see col. 6, claims 18-20). Combination of palladium and zinc is being preferred (see col. 1, ln 64-65). *Thomson '896* further discloses that it is preferable that the molar ratio of catalyst metal to material is from 1:10 to 1:1, such as from 1:5 to 1:2 (see col. 1, ln 65-67). See also entire reference for further details.

The disclosed Group VIII metal and Group IIIA metal concentrations, and their metal ratios are falling within the claimed ranges, which meet the claimed limitations.

The limitation on “wherein the catalyst is capable of selectively hydrogenating acetylene with a conversion Sc of at least about 95% and a selectivity to ethylene relative to ethane Ss of at least about 25 when the catalyst is employed in a steady-state liquid phase hydrogenation

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process” in the independent claims and also in the dependent claims are noted. It is considered the catalyst disclosed by *Thomson '896* would inherently be capable of performing the same because both the disclosed catalyst and the claimed catalyst contain the same metal components, same metal concentrations, and having the same composition.

There is no patentable distinction seen between the claimed catalyst and that disclosed by the reference, thus anticipates the instant claims.

**Claim Rejections - 35 USC § 102(b)/103**

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A. **Claims 58-60, 112-115, & 117-119** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sarrazin et al., hereinafter referred to as "*Sarrazin '851*", (US Pat. 5,356,851).

Product-by-process limitations in these claims have been noted. While they are not disregarded, they have no bearing on the patentability of the claimed catalyst because the instant claims are called for “a catalyst”, which is a product and not a process of making the catalyst. It

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is well settled that the patentability of the product and its method of production are separately determined. The catalyst disclosed is seen the same as the claimed catalyst, which anticipates the instant claims. See *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Brown*, 173 USPQ 688, 688 (CCPA 1977); *In re Fessman*, 180 USPQ 324, 326 (CCPA 1977). See also *MPEP* 2113.

B. **Claims 112-119** are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over “*Thomson '896*”, (US Pat. 5,817,896).

Product-by-process limitations in these claims have been noted. While they are not disregarded, they have no bearing on the patentability of the claimed catalyst because the instant claims are called for “a catalyst”, which is a product and not a process of making the catalyst. It is well settled that the patentability of the product and its method of production are separately determined. The catalyst disclosed is seen the same as the claimed catalyst, which anticipates the instant claims. See *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Brown*, 173 USPQ 688, 688 (CCPA 1977); *In re Fessman*, 180 USPQ 324, 326 (CCPA 1977). See also *MPEP* 2113.

#### **Claim Rejections - 35 USC § 103**

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.



**Claims 37-39, 41-44, 46-47, & 49-50** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrazin et al., hereinafter referred to as "***Sarrazin '851***", (US Pat. 5,356,851) **OR taken together with** Dai et al., hereinafter referred to as "***Dai '127***", (US Pat. 6,822,127 B2).

***Sarrazin '851*** and ***Thomson '896*** disclose catalysts as set forth in paragraphs 3A and 3B above, except for the second metal component being Group VIIB (or Mn) as recited in the above listed claims.

However, it would have been *prima facie obvious* to one of ordinary skill in the art at the time the invention was made to have incorporated these known "Mn" metal component into the catalyst of ***Sarrazin '851*** and ***Thomson '896*** in order to achieve a selective hydrogenation catalyst having an enhanced or increased in catalytic activities because it is known as useful catalytic metal, as evidenced by ***Dai '127*** (see ***Dai '127*** at col. 14, claim 1).

#### **Response to Applicants' Arguments**

6. The remarks filed on 09/22/09 have been fully considered, but not deemed persuasive in view of the new ground of rejection(s) and/or objection(s) above and the following reason(s)

Applicants amended the independent claims 1, 14, 51, 66, & 112 to recite "wherein the Group VIIB metal comprises Mn" is noted. It would appear that such recitation does not limit these claims to "Mn" only, but "zinc" and "Group IIIA metals" from the Markush group can also be chosen as the second metal in these claims. The claimed catalyst does not appear to distinguish from the disclosed catalyst. Thus, the rejections are maintained.

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Applicants' arguments regarding the *Sarrazin '851* and *Thomson '896* references for not teaching the claimed limitation on "and is capable of selectively hydrogenating acetylene.....hydrogenation process" is noted. It is seen from the independent claims 1, 14, 51, 66, & 112, that the requirement is "*a selective hydrogenation catalyst consisting essentially of a precursor comprising at least one Group VIII metal disposed on an inorganic support; and a second metal selected from the group consisting of zinc, Group IIIA metals, Group VIIB metals, wherein the Group VIIB metal comprises Mn, and combinations thereof, disposed on the precursor; wherein the catalyst comprises between 0.01 and 10 weight % Group VIII metal*". Thus, there is no catalytic properties being claimed, such as particle size, distribution, etc. or anything else in the instant claims to differentiate the claimed catalyst from those of the prior art references as applied. *Sarrazin '851* and *Thomson '896* disclose the same catalysts as being claimed and thus it is only reasonable to conclude that the catalysts disclosed would be inherent and expected to have the same capability of performing the same as the instant claimed catalyst.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### **Conclusion**

8. Claims 1-4, 6, 10-16, 18-20, 23-30, 32-33, 35-39, 41-44, 46-47, 49-70, 72-77, & 112-119 are pending. Claims 1-4, 6, 10-16, 18-20, 23-30, 32-33, 35-39, 41-44, 46-47, 49-70, 72-77, & 112-119 are rejected. No claims are allowed.

### **Contacts**

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Primary Examiner CAM N. NGUYEN, whose telephone number is 571-272-1357. The examiner can normally be reached on M-F, 9:00 AM - 6:30 PM, at alternative work site.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-272-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cam N. Nguyen/

Primary Examiner

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/C. N. N./

December 20, 2009